O&M Manuals

MAINTENANCE, SPARE PARTS & CLEANING PERIODIC TABLES

THE IMPORTANCE OF PROGRAMMED MAINTENANCE

Reliability and Continuity of Service

- Ensures that essential building services, power, heating, cooling, ventilation, lighting, lifts, etc. operate consistently without unplanned breakdowns that could disrupt business operations.

Safety and Compliance

- Regular inspection and servicing of systems (e.g., fire alarms, emergency lighting, boilers, electrical distribution boards) help meet statutory obligations under UK regulations such as the Electricity at Work

Regulations 1989**,** Gas Safety Regulations**,** and F-Gas Regulations**.**

- Minimises risks of fire, electric shock, gas leaks, and other hazards.

Asset Protection and Longevity

- Extends the life expectancy of costly assets such as chillers, switchgear, and pumps by preventing wear and tear through lubrication, cleaning, calibration, and replacement of consumables.

Energy Efficiency

- Properly maintained systems (e.g., HVAC, lighting controls, boilers) operate more efficiently, reducing energy waste and supporting compliance with Energy Performance and sustainability standards (TM44, Part L, etc.)**.**
- Leads to lower utility costs and carbon emissions.

Cost Control

- Prevents expensive emergency call-outs and major system failures by addressing minor faults before they escalate.
- Allows budgeting for known, scheduled works rather than unpredictable reactive repairs.

Legal and Insurance Obligations

- Demonstrates compliance with maintenance requirements often stipulated in leases, contracts, and insurance policies.
- Provides evidence of due diligence in case of accidents or claims.

Business Continuity & Occupant Comfort

- Maintains acceptable internal environmental conditions (temperature, ventilation, lighting) to support staff productivity, occupant wellbeing, and client satisfaction.
- Prevents downtime in critical environments such as data centres, hospitals, or schools.

Record Keeping and Asset Management

- Programmed maintenance generates a documented history of inspections, tests, and servicing, which is essential for O&M manuals**,** asset registers**,** Health & Safety Files**,** and lifecycle planning.
- Supports asset tracking, spare-parts management, and future replacement strategies.

Importance of Using Correct Spare Parts

All replacement spare parts must be genuine or manufacturer-approved to maintain system safety, compliance, reliability, and warranty validity.

Safety Assurance
- Incorrect or non-approved parts can cause overheating, short circuits, fire risks, mechanical failure, or accidents.
- In life-safety systems (e.g., fire alarms, emergency lighting, ventilation), using the wrong part can compromise occupant safety.

System Reliability & Performance
- Manufacturer-approved parts are designed to meet the system's performance tolerances.
- Incorrect parts may reduce efficiency, lead to frequent breakdowns, or cause premature system failure.

Compliance with Regulations & Standards
- Building services must comply with British Standards, CDM, Health & Safety regulations, and manufacturer guidelines.
- Using non-compliant parts may invalidate certification, insurance, and warranties.

Warranty & Liability Protection
- Many warranties and guarantees become void if substitute or non-approved parts are fitted.
- If failure occurs due to incorrect spares, liability shifts to the owner/operator.

Cost Control & Asset Life Extension
- Correct parts prevent damage to associated equipment, avoiding costly secondary failures.
- They help achieve the intended life expectancy of assets, supporting lifecycle maintenance planning.

Ease of Maintenance & Traceability
- Proper parts align with original serial numbers and asset registers, aiding traceability in O&M manuals.
- Ensures future servicing and replacements can be done efficiently.

Energy Efficiency & Sustainability
- Genuine parts maintain the system's designed energy performance (e.g., motors, fans, pumps).
- Reduces waste from frequent failures and unnecessary replacements.

Importance of Regular Cleaning

Regular cleaning of all electrical and mechanical systems is carried out to prevent hazards, maintain efficiency, extend equipment life, and ensure compliance with statutory requirements.

Fire & Safety Protection
- Dust, grease, and debris on electrical panels, luminaires, or mechanical plant can cause overheating, arcing, or even fire.
- Clean systems reduce risks to occupants and property.

Improved System Efficiency
- Mechanical systems such as AHUs, FCUs, chillers, and boilers operate more efficiently when coils, filters, and ductwork are clean.
- Electrical connections and switchgear free from dust and contaminants maintain optimal conductivity and cooling.

Extended Asset Life
- Dirt build-up accelerates wear on bearings, fans, motors, and moving components.
- Regular cleaning reduces strain and prolongs system lifespan.

Energy Savings
- Clean HVAC systems reduce fan and pump resistance, lowering energy use.
- Clean lighting systems provide maximum illumination without wasted power.

Indoor Air Quality & Occupant Comfort
- Clean ductwork, filters, and coils prevent circulation of dust, allergens, and bacteria, improving occupant health and comfort.

Compliance with Regulations & Standards
- Regular cleaning supports compliance with COSHH, F-Gas, Legionella control, and Health & Safety requirements.
- Demonstrates duty of care under statutory inspections.

Minimised Breakdowns & Maintenance Costs
- Prevents blockages, overheating, and contamination that cause unplanned failures.
- Cleaning reduces the need for emergency repairs and downtime.

Warranty & Insurance Validity
- Many warranties require systems to be kept clean and well maintained.
- Insurers may reject claims if poor maintenance (e.g., clogged filters, dirty electrical equipment) contributed to damage.

PROGRAMMED MAINTENANCE PERIODIC TABLE

Programmed maintenance regime	Part of Programmed maintenance regime
Observational maintenance	General personnel, occupants, cleaners etc
Practical maintenance	Authorised in House personnel
Practical maintenance	Specialist contractor only
Periodic overhaul by specialist	10/15-year Overhauled by specialist contractor only
Replace	Recommended complete replacement by specialist

Periodic tables

Part of Programmed maintenance regime	Daily	Every Week	Every Month	Every year	3/5 years	10/15 years
Above ground drainage	√	√	√	√	√	√
Air curtains	√	√	√	√	√	√
Air handling units	√	√	√	√	√	√
Air source heat pumps	√	√	√	√	√	√
Attenuators	√	√	√	√	√	√
BMS systems	√	√	√	√	√	√
Booster sets	√	√	√	√	√	√
Buffer vessel	√	√	√	√	√	√
Dosing pot	√	√	√	√	√	√
Ductwork	√	√	√	√	√	√
Fire and smoke dampers	√	√	√	√	√	√
LTHW heating pumps	√	√	√	√	√	√
LTHW Valves	√	√	√	√	√	√
Pipework	√	√	√	√	√	√
Domestic water services	√	√	√	√	√	√
Pressurisation units	√	√	√	√	√	√
Sanitaryware	√	√	√	√	√	√
Supply and extract grilles	√	√	√	√	√	√
VRF – Variable refrigerant flow equipment	√	√	√	√	√	√
Mechanical services labelling	√	√	√	√	√	√
Access controls	√	√	√	√	√	√
Assisted WC alarms	√	√	√	√	√	√
Cabling	√	√	√	√	√	√
Circuit monitoring systems	√	√	√	√	√	√
Containment	√	√	√	√	√	√
Dado trunking	√	√	√	√	√	√
Distribution Boards	√	√	√	√	√	√
Earthing and bonding	√	√	√	√	√	√
Electrical vehicle chargers	√	√	√	√	√	√
Emergency lighting	√	√	√	√	√	√
Examination luminaires	√	√	√	√	√	√
External lighting	√	√	√	√	√	√
Fire alarm panels	√	√	√	√	√	√
Induction loop systems	√	√	√	√	√	√
Internal luminaires	√	√	√	√	√	√
Internal switch board	√	√	√	√	√	√
Intruder alarm	√	√	√	√	√	√
IT Systems	√	√	√	√	√	√
Lighting controls	√	√	√	√	√	√
Lightning protection	√	√	√	√	√	√
LV Panel board	√	√	√	√	√	√
PV Systems	√	√	√	√	√	√
Refuge alarm	√	√	√	√	√	√
Small power accessories	√	√	√	√	√	√
Video intercom	√	√	√	√	√	√

INSTALLING SPARE PARTS

In House Operatives	Trained and authorised in house operatives having the knowledge, experience to render the correct spare parts
Specialist Contractors	Specialist Contractors only
Part of a programmed maintenance regime	Spares are replaced as part of an ongoing programmed maintenance regime
Sealed Units no spares required	No spare parts required replace complete unit like for like
Require spares	Periodically require authorised and approved spares

Periodic tables

Systems	In house	Specialist	Program	Sealed unit	Require spares
Above ground drainage	√		√	√	
Air curtains		√	√	√	
Air handling units		√	√	√	
Air source heat pumps		√	√	√	
Attenuators		√	√	√	
BMS systems		√	√		√
Booster sets		√	√		√
Buffer vessel		√	√		√
Dosing pot		√	√	√	
Ductwork		√	√	√	
Fire and smoke dampers		√	√	√	
LTHW heating pumps		√	√	√	
LTHW Valves		√	√	√	
Pipework	√		√	√	
Domestic water services		√	√	√	
Pressurisation units		√	√	√	
Sanitaryware	√		√	√	
Supply and extract grilles		√	√	√	
VRF – Variable refrigerant flow equipment		√	√		√
Mechanical services labelling	√		√		√
Access controls		√	√	√	
Assisted WC alarms		√	√	√	
Cabling	√		√	√	
Circuit monitoring systems		√	√	√	
Containment	√		√	√	
Dado trunking	√		√		√
Distribution Boards	√		√		√
Earthing and bonding		√	√	√	
Electrical vehicle chargers		√	√	√	
Emergency lighting		√	√	√	
Examination luminaires		√	√	√	
External lighting		√	√	√	
Fire alarm panels		√	√	√	
Induction loop systems		√	√	√	
Internal luminaires		√	√		√
Internal switch board		√	√		√
Intruder alarm		√	√		√
IT Systems		√	√		√
Lighting controls		√	√		√
Lightning protection		√	√		√
LV Panel board		√	√		√
PV Systems		√	√		√
Refuge alarm		√	√		√
Small power accessories	√		√	√	
Video intercom		√	√	√	

CLEANING SCHEDULES

In House Operatives	Trained and authorised in house operatives having the knowledge, experience to render the correct spare parts
Specialist Contractors	Specialist contractors only
System deep clean overhaul	Part of a programmed maintenance and cleaning regime
Replace	Recommended complete replacement by specialist

Periodic tables

Systems	1 month	6 months	1 year	10/15 years
Above ground drainage	√	√	√	√
Air curtains	√	√	√	√
Air handling units	√	√	√	√
Air source heat pumps	√	√	√	√
Attenuators	√	√	√	√
BMS systems	√	√	√	√
Booster sets	√	√	√	√
Buffer vessel	√	√	√	√
Dosing pot	√	√	√	√
Ductwork	√	√	√	√
Fire and smoke dampers	√	√	√	√
LTHW heating pumps	√	√	√	√
LTHW Valves	√	√	√	√
Pipework	√	√	√	√
Domestic water services	√	√	√	√
Pressurisation units	√	√	√	√
Sanitaryware	√	√	√	√
Supply and extract grilles	√	√	√	√
VRF – Variable refrigerant flow equipment	√	√	√	√
Mechanical services labelling	√	√	√	√
Access controls	√	√	√	√
Assisted WC alarms	√	√	√	√
Cabling	√	√	√	√
Circuit monitoring systems	√	√	√	√
Containment	√	√	√	√
Dado trunking	√	√	√	√
Distribution Boards	√	√	√	√
Earthing and bonding	√	√	√	√
Electrical vehicle chargers	√	√	√	√
Emergency lighting	√	√	√	√
Examination luminaires	√	√	√	√
External lighting	√	√	√	√
Fire alarm panels	√	√	√	√
Induction loop systems	√	√	√	√
Internal luminaires	√	√	√	√
Internal switch board	√	√	√	√
Intruder alarm	√	√	√	√
IT Systems	√	√	√	√
Lighting controls	√	√	√	√
Lightning protection	√	√	√	√
LV Panel board	√	√	√	√
PV Systems	√	√	√	√
Refuge alarm	√	√	√	√
Small power accessories	√	√	√	√
Video intercom	√	√	√	√

Basics

1.	Equipment being used for the purpose designed and intended
2.	Competently trained operatives only using the equipment
3.	Equipment working as intended
4.	Area around the equipment is adequate and not cluttered
5.	Equipment is generally clean, dust and dirt free, no burning smells, no vibrations
6.	Equipment is sound without exposed working or current carrying parts
7.	Adequate assistance available in the case of an equipment malfunction
8.	Any equipment malfunctions or poor operations are reported immediately
9.	Equipment not used until problems correctly repaired or replaced

Regular and routine procedures

1.	Competently trained operatives only carrying out maintenance procedures
2.	All equipment is isolated before maintenance work starts
3.	Where required, adequate Access Equipment and methods are used
4.	Correct tools and calibrated testing equipment employed
5.	Required maintenance records are available and up to date
6.	Repairs or replacement requests from previous maintenance attended to
7.	Previously carried out Risk Assessments are understood and compliant
8.	Previously on-going recorded problems have been rectified
9.	Associated areas have been notified of maintenance work being carried out
10.	Previously fitted spares or new parts are performing to the required standards
11.	Equipment is not adversely affecting other adjacent equipment
12.	All guards and protective devices where required are in place and working
13.	All switching and isolating procedures work correctly and immediately on request
14.	Correct environment protection, ie free from water, steam, ingress potential
15.	All new parts and spares are in accordance with the equipment
16.	Modifications to equipment do not overload the equipment and render it unsafe
17.	Specialist equipment is maintained by Specialist Contractors or Engineers
18.	Equipment is maintained at regular intervals as recommended by manufacturer
19.	All commissioning records are up to date
20.	Adequate supplies of essential spare parts are readily available
21.	Faulty equipment remains isolated and un-used until repaired and tested